WRIGHT-PATTERSON AIR FORCE BASE, AREA B,
BUILDING 32, ORIGINAL WRIGHT FIELD SHOPS
DAYTON VIC.
GREENE COUNTY
OHIO

HAER No. OH-79-K

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
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HISTORIC AMERICAN ENGINEERING RECORD

WRIGHT-PATTERSON AIR FORCE BASE, AREA B,
BUILDING 32, ORIGINAL WRIGHT FIELD SHOPS
HAER No. OH-79-K

Location: 4th Street, from D to E Streets, adjacent to Building 31; Wright-Patterson Air Force Base, Area B, Dayton Vicinity, Greene County, Ohio.

Dates of Construction: 1926-27.

Architect: Office of Constructing Quartermaster.

Construction Contractor: Foundation: J.I. Geiger, Dayton, OH.
Superstructure: E.H. Latham Co., Columbus, OH.

Present Owner: USAF.

Present Use: North section: Overflow office space.
South section: Annex for Landing Gear Test Laboratory in adjacent Building 31.

Significance: This structure was the original site of the Wright Field engineering shops, supporting the vital research being conducted in Building 31.

Project History: This report is part of the overall Wright-Patterson Air Force Base, Area B documentation project conducted by HAER 1991-1993. See overview report, HAER No. OH-79, for a complete description of the project.

DESCRIPTION: Attached to the north side of Building 31 and covering an area of 283' x 264', Building 32 has a five-gabled front with two newer connecting gables several feet higher than the original ones. It has wide copper entabulatures, low-pitched gable roofs, and rectangular brick corner columns that decorate the north face. The bearing wall is masonry with steel trusses, and the exterior wall is concrete block with red-brick veneer in a seven-course, American bond pattern. The west side retains a 1948 limestone block entryway with Art Deco-style details, including glass and aluminum doors and aluminum outdoor light fixtures. Smaller windows and new brick have replaced most of the original large window bays on the west side, and numerous ventilation and exhaust structures protrude from the black-shingled roof.

HISTORY: Building 32 was not identified as a separate building when it was first constructed in 1927, but was considered a portion of Building 31, to which it was connected. What is now called Building 32 began as three separate 65'-wide spurs each extending 120' north from Building 31. This was the original location of Wright Field's engineering shops, and, from west to east, the shops housed the sheet metal, machine and wood shops that supported work performed in Building 31.

In 1931 and 1932, a wood block floor was laid on top of the concrete floor to better absorb the shocks of shop operations and provide a safer work environment. In late 1940 and early 1941, all three buildings were extended to 4th Street and the two spaces in between were filled in, creating one large building 283' x 264' which was designated Building 32.

The engineering shops moved to Building 5 when it was completed in 1943. The Materials Laboratory then relocated from its former home across D Street in Building 16 to Building 32 where it remained for many years, despite the permanent tile partitions between the five sections of the structure which limited the facility's adaptability. Among the advantages of Building 32 over Building 16 were a larger cold room, capable of holding a temperature of -70°F, and a series of x-ray rooms with 12"-thick reinforced concrete walls and massive lead-lined doors.

In the 1940s and 1950s the Materiels Laboratory incorporated several important facilities. The chemical and physical analysis equipment performed state-of-the-art analyses of materials samples, including molecular, mass, emission, and infrared spectroscopy and electron and x-ray diffraction. The metallographic facility studied the molecular and crystalline structures of experimental metals and compounds of vanadium, columbium (niobium), molybdenum, and titanium. This work contributed to knowledge of tensile strength,

torsion resistance, and the creep and rupture potential of materials. Building 32 also housed several small centrifuges which conducted acceleration tests on materials samples from .5 to 8800 grams in mass. Finally, various environmental chambers occupied much of the building. Ranging from 1 cubic foot to 4500 cubic feet, these tested materials properties at hot and cold extremes of temperature, high and low humidity, and temperature gradients of up to 500 degrees per hour in the high-temperature rooms and up to 40 degrees per hour in the low-temperature rooms.

The supply and shop support activities were centralized in September 1952; machine shop personnel remained in Building 32 but under different management. In 1961 Materials Central moved its offices to Building 17, but Building 32 remained in use both as laboratories and offices. In 1963 a Military Construction Program funded modifications which improved the Advanced Metallurgical Studies Area. During the 1970s and 1980s, the Materials Laboratory complex of Buildings 651 through 655 was constructed, and individual laboratories gradually moved from Building 32 as new space became available. The chemical, metallurgical, and non-metallic analysis laboratories were among the last to leave before Building 32's laboratory function ceased. Since that time, various offices, such as Acquisition Logistics, Short-Range Attack Missile (SRAM) System Program Office (SPO), Aeronautical Systems Division (now Aeronautical Systems Center) Weather Office, and ASD Small Business Office have occupied the building. In late 1992-1993, Building 32 will undergo a historically sympathetic rehabilitation. Afterwards, the southern section will be given to the Landing Gear Laboratory of adjacent Building 31, and the remainder of Building 32 will become flexible office space.

For bibliography, see Wright-Patterson Air Force Base overview report (HAER No. OH-79).